

JP.07-010837,U

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JAPANESE [JP.07-010837,U]

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CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE  
INVENTION TECHNICAL PROBLEM MEANS OPERATION EXAMPLE DESCRIPTION OF  
DRAWINGS DRAWINGS

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[Translation done.]

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**CLAIMS**

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**[Utility model registration claim]**

[Claim 1] The tray for taking a record medium in and out, and the driving means for moving the above-mentioned tray forward and backward on a chassis. In the loading device which has the switch made to stop the above-mentioned driving means when the above-mentioned tray moves the above-mentioned record medium to the location in which ejection is possible. The projection for arranging the control unit of the control lever of the above-mentioned switch, enabling free rotation, depressing the above-mentioned control unit, and pushing the above-mentioned switch is prepared in the above-mentioned tray. The loading device characterized by making it move before and after the above-mentioned control unit while the projection of the above-mentioned tray had depressed the control unit of the above-mentioned switch.

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## DETAILED DESCRIPTION

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[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the loading device used in order to equip a regenerative apparatus with record media, such as a compact disk (CD) and a laser disc (LD), or to remove them.

[0002]

[Description of the Prior Art]

In the regenerative apparatus of record media, such as CD and LD, in order to equip with or remove CD and LD, the loading device 20 as shown in drawing 10 is used.

In this drawing, the tray 22 is laid in the chassis 21 of a loading device 20 movable forward and backward. The lid 23 is arranged on the chassis 21. Opening 24 is formed in the front end of a loading device 20 with the chassis 21 and the lid 23. If the motor for loading which is not illustrated is driven, a tray 22 will pass opening 24 and will move.

[0003]

The leaf switch 25 of the motor for loading is attached in the chassis 21. Although the bottom of a tray 22 is evenly formed so that it can slide on a chassis 21 top, the screw 26 for pushing the leaf switch 25 from back is attached in the back end section. And if a screw 26 pushes the leaf switch 25 by advance of a tray 22, the motor for loading will be turned OFF. In addition, although the screw 26 is used in the example of illustration in order to push the leaf switch 25, it may substitute for a lever etc.

[0004]

[Problem(s) to be Solved by the Device]

However, since the leaf switch 25 cannot be bent beyond the need, if excrescence, such as a screw 26 and a lever, is attached in a tray 22, neither a screw 26 nor the excrescence can pass the leaf switch 25, and cannot once move to it. Therefore, when assembling a loading device 20, after putting a tray 22 into the interior of a loading device 20, a screw 26, a lever, etc. must be attached. Moreover, to remove a tray 22 for repair etc., it is necessary to remove a screw 26 and a lever or to remove the leaf switch 25. For this reason, the activity of assembly or repair became complicated and efficiency was reduced.

[0005]

Then, this design solves a technical problem which was mentioned above, and aims at offering the loading device which can make installation of a tray and removal easy.

[0006]

[Means for Solving the Problem]

In order to solve an above-mentioned technical problem, it sets to this design. The tray for taking a record medium in and out, and the driving means for moving a tray forward and backward on a chassis, in the loading device which has the switch made to stop a driving means when a tray moves a record medium to the location in which ejection is possible. It is characterized by making it move before and after a control unit, while the control unit of the control lever of a switch is arranged enabling free rotation, the projection for depressing a control unit and pushing a switch was prepared in the tray and the projection of a tray had

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depressed the control unit of a switch.

[0007]

[Function]

As shown in drawing 1, in the loading device 20, the crevice 44 is established in the pars basilaris ossis occipitalis of a tray 22. The projection 100 is formed in the interior of a crevice 44.

The switch 92 made to suspend the motor 58 ( drawing 2 ) for loading which drives a tray 22 is attached in the lower part of a chassis 21. A switch 92 is a push switch which pushes and operates a carbon button 93. The control lever 94 which pushes a carbon button 93 is supported pivotably by the chassis 21 bottom. The control unit 96 by which a control lever 94 is caudad depressed by projection 100, and the operation section 97 which operates the carbon button 93 of a switch 92 are formed in the shape of L character. If it slides on a tray 22 ahead, in connection with a control unit 96 being depressed by projection 100, the operation section 97 will push the carbon button 93 of a switch 92.

[0008]

The projection 100 is movable forward and backward exceeding the control unit 96 of a control lever 94, and it becomes possible to remove a tray 22 easily or to attach.

[0009]

[Example]

Hereafter, one example of the loading device concerning this design is explained to a detail with reference to a drawing.

[0010]

Drawing 1 shows the configuration of the loading device 20 concerning this design. This loading device 20 is applied to CD regenerative apparatus. As shown also in drawing 2, in the loading device 20, the rectangular tabular tray 22 is laid on the rectangular chassis 21, and the tray 22 top is further covered with the lid 23. In order to carry and convey CD27, it enables it to move a tray 22 forward and backward. For this reason, a chassis 21 and the opening 24 which passes a tray 22 with a lid 23 are formed in the front end of a loading device 20.

[0011]

The read station 28 which performs rotation drive of CD27 and reading of recording information is arranged at the back end side of a chassis 21. The motor 29 is attached ahead of the read station 28, and the disk supporter 30 is being fixed at the tip of revolving-shaft 29a of a motor 29. Moreover, the disk clumper 31 is attached in the lid 23 pivotable. Clamping of CD27 is carried out to the disk supporter 30 by the disk clumper 31, and it rotates by the motor 29.

[0012]

As shown in drawing 2 and drawing 3, a hole 33 is formed in a read station 28, and pickup 32 is arranged in it. It enables it to move pickup 32 forward and backward along with the guide bar 34 attached in one side of a hole 33.

[0013]

The shaft 35 protrudes on the back end side of the both-sides side of a read station 28, and as shown in drawing 4, the read station 28 is attached in the chassis 21 so that it can rotate centering on a shaft 35. Thus, since the disk supporter 30 moves in the vertical direction when a read station 28 rotates, as mentioned above, the discharge can be performed with clamping of CD27. In addition, in order to rotate a read station 28, the cylinder-like cam follower 36 protrudes on the front end side of a read station 28. The plate cam 78 which moves to right and left contacts this cam follower 36, and a read station 28 rotates.

[0014]

As shown in drawing 5, the notching section 37 of a key form is mostly formed in the center for clamping of CD27 and reading by pickup 32 of a tray 22. And the two installation sections 38 and 40 for CD with which sizes differ in the top face of a tray 22 are formed on the concentric circle.

[0015]

A crevice 44 is established in the pars basilaris ossis occipitalis of a tray 22, and the flank 42 of right and left of a tray 22 is formed stair-like. And the straight-line-like protruding lines 45, 46,

47, and 48 are formed in the interior of a crevice 44 covering the overall length of a tray 22. Moreover, guides 50, 52, 54, and 56 are formed in the location which corresponds to the front end of a chassis 21 with protruding lines 45, 46, 47, and 48 at drawing 2 so that it may be shown. When a tray 22 slides on a cross direction, protruding lines 45, 46, 47, and 48 are guided in guides 50, 52, 54, and 56. Since he is trying for these guides 50, 52, 54, and 56 to become high a little from a chassis 21, a tray 22 opens a chassis 21 and slight spacing, and moves them. Furthermore, the guide 57 for regulating vertical movement of a tray 22 is formed in the flank of right and left of a chassis 21, and the flank 42 of both trays 22 is pressed down now.

[0016]

As shown in drawing 2, the motor 58 for loading for driving a tray 22 is installed in the chassis 21. Moreover, the gear train 60 which transmits rotation of the motor 58 for loading to a tray 22 etc. is formed in the chassis 21.

As shown also in drawing 6, in the gear train 60, the pulley 62 and the pinion 64 are arranged on the same axle. Moreover, a main wheel 66 is formed so that it may gear with a pinion 64, and the pinion 68 is formed on a main wheel 66 and the same axle. Furthermore, a main wheel 70 is formed so that it may gear with a pinion 68, and the pinion 72 is formed on a main wheel 70 and the same axle. And since the small pulley 74 fixes to the revolving shaft of the motor 58 for loading and the belt 76 is wound around the small pulley 74 and the pulley 62, the turning effort of the motor 58 for loading is transmitted to the gear train 60.

[0017]

Now, the plate cam 78 for rotating a read station 28 as mentioned above is formed in the chassis 21. As a plate cam 78 was shown also in drawing 6, the long arm 82 was formed in one on the rectangular plate-like cam body 80, and the arm 82 is prolonged on both sides of the cam body 80. The rack 84 is formed in the arm 82 and the rack 84 has geared with the pinion 72.

Therefore, a plate cam 78 comes to move to right and left with rotation of the motor 58 for loading.

[0018]

Moreover, the through tube 87 is formed in the edge of both arms 82. If a hook etc. is hooked on a through tube 87 even when the motor 58 for loading does not start by failure etc., a plate cam 78 can be compulsorily moved to right and left. Since a tray 22 will not hit the disk supporter 30 if a read station 28 is rotated caudad when the motor 58 has stopped by this, it becomes possible to pull out a tray 22.

[0019]

There is a cam groove 81 for inserting in the cam follower 36 (referring to drawing 3) of a read station 28 in the cam body 80. The cam groove 81 is formed by the ramp which connects this to an up-and-down horizontal level. Therefore, if a plate cam 78 moves to right and left, a read station 28 will come to rotate up and down. Moreover, the rack 86 is formed in the protruding line 46 formed in the inferior surface of tongue of a tray 22. A rack 86 gears with a main wheel 70, and moves a tray 22 forward and backward.

[0020]

Heights 88 have jutted out into the flank of an arm 82. Moreover, as shown in drawing 5, the tabular projection 90 is aslant attached in the inferior surface of tongue of a tray 22. If a plate cam 78 is moved to the method of the right from the condition of drawing 2, as shown in drawing 7, heights 88 will push projection 90 on the method of the right, but since the press side of projection 90 inclines, a tray 22 moves to the front slightly. Thereby, a rack 86 gears with a main wheel 70, and it becomes possible to move a tray 22 to the front by the motor 58 for loading.

[0021]

Now, as shown also in drawing 8, the connection section 91 is attached in the lower part of a chassis 21, and the switch 92 for stopping the motor 58 for loading is being further fixed to the connection section 91. A switch 92 is a push switch of a format with a carbon button 93, and if this carbon button 93 is pushed, the motor 58 for loading will suspend it.

[0022]

Moreover, the control lever 94 for operating a switch 92 is supported pivotably by the upper part

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of a chassis 21 with the shaft 95. The control unit 96 to which it depresses from a tray 22 and the force is applied, and the operation section 97 for pushing the carbon button 93 of a switch 92 stand in a row in the shape of L character, and the control lever 94 is formed.

[0023]

Since a control unit 96 is depressed on a tray 22 so that it may mention later, it was mostly formed in "in the shape of [ of ] a character, and has been prolonged a little from the shaft 95 upward to the front. On the other hand, the operation section 97 is prolonged from the shaft 95 to the lower part towards the switch 92 side. In addition, a shaft 95 is arranged at the supporter 98 of the shape of a U-shaped gutter formed in the chassis 21, the shape of reverse V character further attached in the chassis 21 escapes from it, and it is preventing from escaping from it upwards by the stop 99. Therefore, the lever 94 is pivotable centering on a shaft 95, a control unit 96 serves as [ the supporting point and the operation section 97 ] a power point, and a shaft 95 serves as point of application.

[0024]

This control lever 94 is arranged directly under the protruding line 48 of a tray 22. In order to depress a control unit 96, the projection 100 which projects below is formed in the back end section of a protruding line 48. Projection 100 has a part with proper level die length, and the ramp is prepared before and after that. In order to make receipts and payments of a tray 22 easy so that it may mention later, the lowest edge of projection 100 is located in a location higher than the lowest edge of the flank 42 of both trays 22. Moreover, the upper limit section of the control unit 96 of a control lever 94 is more nearly up than the lowest edge of projection 100.

[0025]

Next, the process to which a tray 22 is moved to the ejection possible location of the front motion limit 27, i.e., CD, is explained. First, the motor 58 for loading shown in drawing 6 is counterclockwise rotated from the condition that the tray 22 was contained in the chassis 21 as shown in drawing 1. Then, a plate cam 78 moves to the method of the right. In connection with this, a read station 28 rotates caudad, clamping of CD27 is canceled, and as shown in drawing 4, the disk supporter 30 comes below a tray 22.

[0026]

And if a plate cam 78 moves to a right end as shown in drawing 7, in order that the heights 88 of an arm 82 may push the projection 90 of a tray 22, a tray 22 moves to the front slightly. And the rack 86 formed in the protruding line 46 of a tray 22 gears with a main wheel 70, and a tray 22 moves to the front. Since projection 100 will push the control unit 96 of a control lever 94 and the operation section 97 of a control lever 94 will push the carbon button 93 of a switch 92 by push and this caudad if a tray 22 runs to a front motion limit as shown in drawing 8, the motor 58 for loading stops. CD27 can be put on a tray 22 in this condition, or it can remove from a tray 22.

[0027]

Moreover, when the motor for loading stops working, in order to remove a tray 22 from a chassis 21 for convenience' sake [ certain ], a hook etc. is covered over the arm 82 of a plate cam 78 as mentioned above, and it is made to move to the method of the right compulsorily. While canceling clamping of CD27 now, a tray 22 is advanced more slightly than a receipt condition. Then, if a tray 22 is compulsorily pulled out to the front by hand, as shown in drawing 8, a control lever 94 will be depressed by projection 100. A control unit 96 remains contacting the lower limit of projection 100, when pulling out the tray 22 furthermore, if a control unit 96 separates from the projection 100 of a tray 22 as shown in drawing 9 after this, the operation section 97 will be put back to the carbon button 93 of a switch 92, and a control unit 96 will return up by this.

[0028]

At this time, projection 100 only slides on the control unit 96 top of a control lever 94. Therefore, a tray 22 is pulled out from opening 24, without receiving any active jamming. What is necessary is to insert a tray 22 into opening 24 and just to push it in, when containing a tray 22 on a chassis 21. In this case, it becomes possible for a mist beam and a control lever 94 not to become obstructive, and to contain smoothly.

[0029]

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## [Effect of the Device]

This design operates the switch made to stop the driving means for migration before and after a tray by the control lever, arranges it for the control unit of a control lever, enabling free rotation, and prepares the projection for depressing a control unit on a tray and pushing a switch on it, and it is made to move before and after a control unit, while the projection of a tray had depressed the control unit of a switch as explained above.

[0030]

Therefore, according to this design, also when putting a tray into the interior of a loading device, and also when taking out from a loading device, the control lever of a switch does not become obstructive. For this reason, there is effectiveness of the assembly of a loading device and the working capacity of repair improving.

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JP,07-010837,U [TECHNICAL FIELD]

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TECHNICAL FIELD

## [Industrial Application]

This design is related with the loading device used in order to equip a regenerative apparatus with record media, such as a compact disk (CD) and a laser disc (LD), or to remove them.

[0002]

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**PRIOR ART**

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**[Description of the Prior Art]**

In the regenerative apparatus of record media, such as CD and LD, in order to equip with or remove CD and LD, the loading device 20 as shown in drawing 10 is used.

In this drawing, the tray 22 is laid in the chassis 21 of a loading device 20 movable forward and backward. The lid 23 is arranged on the chassis 21. Opening 24 is formed in the front end of a loading device 20 with the chassis 21 and the lid 23. If the motor for loading which is not illustrated is driven, a tray 22 will pass opening 24 and will move.

[0003]

The leaf switch 25 of the motor for loading is attached in the chassis 21. Although the bottom of a tray 22 is evenly formed so that it can slide on a chassis 21 top, the screw 26 for pushing the leaf switch 25 from back is attached in the back end section. And if a screw 26 pushes the leaf switch 25 by advance of a tray 22, the motor for loading will be turned OFF. In addition, although the screw 26 is used in the example of illustration in order to push the leaf switch 25, it may substitute for a lever etc.

[0004]

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**EFFECT OF THE INVENTION****[Effect of the Device]**

This design operates the switch made to stop the driving means for migration before and after a tray by the control lever, arranges it for the control unit of a control lever, enabling free rotation, and prepares the projection for depressing a control unit on a tray and pushing a switch on it, and it is made to move before and after a control unit, while the projection of a tray had depressed the control unit of a switch as explained above.

[0030]

Therefore, according to this design, also when putting a tray into the interior of a loading device, and also when taking out from a loading device, the control lever of a switch does not become obstructive. For this reason, there is effectiveness of the assembly of a loading device and the working capacity of repair improving.

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**TECHNICAL PROBLEM****[Problem(s) to be Solved by the Device]**

However, since the leaf switch 25 cannot be bent beyond the need, if excrescence, such as a screw 26 and a lever, is attached in a tray 22, neither a screw 26 nor the excrescence can pass the leaf switch 25, and cannot once move to it. Therefore, when assembling a loading device 20, after putting a tray 22 into the interior of a loading device 20, a screw 26, a lever, etc. must be attached. Moreover, to remove a tray 22 for repair etc., it is necessary to remove a screw 26 and a lever or to remove the leaf switch 25. For this reason, the activity of assembly or repair became complicated and efficiency was reduced.

**[0005]**

Then, this design solves a technical problem which was mentioned above, and aims at offering the loading device which can make installation of a tray and removal easy.

**[0006]**

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MEANS

## [Means for Solving the Problem]

In order to solve an above-mentioned technical problem, it sets to this design. The tray for taking a record medium in and out, and the driving means for moving a tray forward and backward on a chassis. In the loading device which has the switch made to stop a driving means when a tray moves a record medium to the location in which ejection is possible. It is characterized by making it move before and after a control unit, while the control unit of the control lever of a switch is arranged enabling free rotation, the projection for depressing a control unit and pushing a switch was prepared in the tray and the projection of a tray had depressed the control unit of a switch.

[0007]

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**OPERATION**

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**[Function]**

As shown in drawing 1, in the loading device 20, the crevice 44 is established in the pars basilaris ossis occipitalis of a tray 22. The projection 100 is formed in the interior of a crevice 44.

The switch 92 made to suspend the motor 58 ( drawing 2 ) for loading which drives a tray 22 is attached in the lower part of a chassis 21. A switch 92 is a push switch which pushes and operates a carbon button 93. The control lever 94 which pushes a carbon button 93 is supported pivotably by the chassis 21 bottom. The control unit 96 by which a control lever 94 is caudad depressed by projection 100, and the operation section 97 which operates the carbon button 93 of a switch 92 are formed in the shape of L character. If it slides on a tray 22 ahead, in connection with a control unit 96 being depressed by projection 100, the operation section 97 will push the carbon button 93 of a switch 92.

**[0008]**

The projection 100 is movable forward and backward exceeding the control unit 96 of a control lever 94, and it becomes possible to remove a tray 22 easily or to attach.

**[0009]**

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## EXAMPLE

## [Example]

Hereafter, one example of the loading device concerning this design is explained to a detail with reference to a drawing.

## [0010]

Drawing 1 shows the configuration of the loading device 20 concerning this design. This loading device 20 is applied to CD regenerative apparatus. As shown also in drawing 2, in the loading device 20, the rectangular tabular tray 22 is laid on the rectangular chassis 21, and the tray 22 top is further covered with the lid 23. In order to carry and convey CD27, it enables it to move a tray 22 forward and backward. For this reason, a chassis 21 and the opening 24 which passes a tray 22 with a lid 23 are formed in the front end of a loading device 20.

## [0011]

The read station 28 which performs rotation drive of CD27 and reading of recording information is arranged at the back end side of a chassis 21. The motor 29 is attached ahead of the read station 28, and the disk supporter 30 is being fixed at the tip of revolving-shaft 29a of a motor 29. Moreover, the disk clamper 31 is attached in the lid 23 pivotable. Clamping of CD27 is carried out to the disk supporter 30 by the disk clamper 31, and it rotates by the motor 29.

## [0012]

As shown in drawing 2 and drawing 3, a hole 33 is formed in a read station 28, and pickup 32 is arranged in it. It enables it to move pickup 32 forward and backward along with the guide bar 34 attached in one side of a hole 33.

## [0013]

The shaft 35 protrudes on the back end side of the both-sides side of a read station 28, and as shown in drawing 4, the read station 28 is attached in the chassis 21 so that it can rotate centering on a shaft 35. Thus, since the disk supporter 30 moves in the vertical direction when a read station 28 rotates, as mentioned above, the discharge can be performed with clamping of CD27. In addition, in order to rotate a read station 28, the cylinder-like cam follower 36 protrudes on the front end side of a read station 28. The plate cam 78 which moves to right and left contacts this cam follower 36, and a read station 28 rotates.

## [0014]

As shown in drawing 5, the notching section 37 of a key form is mostly formed in the center for clamping of CD27 and reading by pickup 32 of a tray 22. And the two installation sections 38 and 40 for CD with which sizes differ in the top face of a tray 22 are formed on the concentric circle.

## [0015]

A crevice 44 is established in the pars basilaris ossis occipitalis of a tray 22, and the flank 42 of right and left of a tray 22 is formed stair-like. And the straight-line-like protruding lines 45, 46, 47, and 48 are formed in the interior of a crevice 44 covering the overall length of a tray 22. Moreover, guides 50, 52, 54, and 56 are formed in the location which corresponds to the front end of a chassis 21 with protruding lines 45, 46, 47, and 48 at drawing 2 so that it may be shown. When a tray 22 slides on a cross direction, protruding lines 45, 46, 47, and 48 are guided in guides 50, 52, 54, and 56. Since he is trying for these guides 50, 52, 54, and 56 to become high a

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little from a chassis 21, a tray 22 opens a chassis 21 and slight spacing, and moves them. Furthermore, the guide 57 for regulating vertical movement of a tray 22 is formed in the flank of right and left of a chassis 21, and the flank 42 of both trays 22 is pressed down now.

[0016]

As shown in drawing 2, the motor 58 for loading for driving a tray 22 is installed in the chassis 21. Moreover, the gear train 60 which transmits rotation of the motor 58 for loading to a tray 22 etc. is formed in the chassis 21.

As shown also in drawing 6, in the gear train 60, the pulley 62 and the pinion 64 are arranged on the same axle. Moreover, a main wheel 66 is formed so that it may gear with a pinion 64, and the pinion 68 is formed on a main wheel 66 and the same axle. Furthermore, a main wheel 70 is formed so that it may gear with a pinion 68, and the pinion 72 is formed on a main wheel 70 and the same axle. And since the small pulley 74 fixes to the revolving shaft of the motor 58 for loading and the belt 76 is wound around the small pulley 74 and the pulley 62, the turning effort of the motor 58 for loading is transmitted to the gear train 60.

[0017]

Now, the plate cam 78 for rotating a read station 28 as mentioned above is formed in the chassis 21. As a plate cam 78 was shown also in drawing 6, the long arm 82 was formed in one on the rectangular plate-like cam body 80, and the arm 82 is prolonged on both sides of the cam body 80. The rack 84 is formed in the arm 82 and the rack 84 has geared with the pinion 72.

Therefore, a plate cam 78 comes to move to right and left with rotation of the motor 58 for loading.

[0018]

Moreover, the through tube 87 is formed in the edge of both arms 82. If a hook etc. is hooked on a through tube 87 even when the motor 58 for loading does not start by failure etc., a plate cam 78 can be compulsorily moved to right and left. Since a tray 22 will not hit the disk supporter 30 if a read station 28 is rotated caudad when the motor 58 has stopped by this, it becomes possible to pull out a tray 22.

[0019]

There is a cam groove 81 for inserting in the cam follower 36 (referring to drawing 3) of a read station 28 in the cam body 80. The cam groove 81 is formed by the ramp which connects this to an up-and-down horizontal level. Therefore, if a plate cam 78 moves to right and left, a read station 28 will come to rotate up and down. Moreover, the rack 86 is formed in the protruding line 46 formed in the inferior surface of tongue of a tray 22. A rack 86 gears with a main wheel 70, and moves a tray 22 forward and backward.

[0020]

Heights 88 have jutted out into the flank of an arm 82. Moreover, as shown in drawing 5, the tabular projection 90 is aslant attached in the inferior surface of tongue of a tray 22. If a plate cam 78 is moved to the method of the right from the condition of drawing 2, as shown in drawing 7, heights 88 will push projection 90 on the method of the right, but since the press side of projection 90 inclines, a tray 22 moves to the front slightly. Thereby, a rack 86 gears with a main wheel 70, and it becomes possible to move a tray 22 to the front by the motor 58 for loading.

[0021]

Now, as shown also in drawing 8, the connection section 91 is attached in the lower part of a chassis 21, and the switch 92 for stopping the motor 58 for loading is being further fixed to the connection section 91. A switch 92 is a push switch of a format with a carbon button 93, and if this carbon button 93 is pushed, the motor 58 for loading will suspend it.

[0022]

Moreover, the control lever 94 for operating a switch 92 is supported pivotably by the upper part of a chassis 21 with the shaft 95. The control unit 96 to which it depresses from a tray 22 and the force is applied, and the operation section 97 for pushing the carbon button 93 of a switch 92 stand in a row in the shape of L character, and the control lever 94 is formed.

[0023]

Since a control unit 96 is depressed on a tray 22 so that it may mention later, it was mostly

formed in "in the shape of [ of "] a character, and has been prolonged a little from the shaft 95 upward to the front. On the other hand, the operation section 97 is prolonged from the shaft 95 to the lower part towards the switch 92 side. In addition, a shaft 95 is arranged at the supporter 98 of the shape of a U-shaped gutter formed in the chassis 21, the shape of reverse V character further attached in the chassis 21 escapes from it, and it is preventing from escaping from it upwards by the stop 99. Therefore, the lever 94 is pivotable centering on a shaft 95, a control unit 96 serves as [ the supporting point and the operation section 97 ] a power point, and a shaft 95 serves as point of application.

[0024]

This control lever 94 is arranged directly under the protruding line 48 of a tray 22. In order to depress a control unit 96, the projection 100 which projects below is formed in the back end section of a protruding line 48. Projection 100 has a part with proper level die length, and the ramp is prepared before and after that. In order to make receipts and payments of a tray 22 easy so that it may mention later, the lowest edge of projection 100 is located in a location higher than the lowest edge of the flank 42 of both trays 22. Moreover, the upper limit section of the control unit 96 of a control lever 94 is more nearly up than the lowest edge of projection 100.

[0025]

Next, the process to which a tray 22 is moved to the ejection possible location of the front motion limit 27, i.e., CD, is explained. First, the motor 58 for loading shown in drawing 6 is counterclockwise rotated from the condition that the tray 22 was contained in the chassis 21 as shown in drawing 1. Then, a plate cam 78 moves to the method of the right. In connection with this, a read station 28 rotates caudad, clamping of CD27 is canceled, and as shown in drawing 4, the disk supporter 30 comes below a tray 22.

[0026]

And if a plate cam 78 moves to a right end as shown in drawing 7, in order that the heights 88 of an arm 82 may push the projection 90 of a tray 22, a tray 22 moves to the front slightly. And the rack 86 formed in the protruding line 46 of a tray 22 gears with a main wheel 70, and a tray 22 moves to the front. Since projection 100 will push the control unit 96 of a control lever 94 and the operation section 97 of a control lever 94 will push the carbon button 93 of a switch 92 by push and this caudad if a tray 22 runs to a front motion limit as shown in drawing 8, the motor 58 for loading stops. CD27 can be put on a tray 22 in this condition, or it can remove from a tray 22.

[0027]

Moreover, when the motor for loading stops working, in order to remove a tray 22 from a chassis 21 for convenience' sake [ certain ], a hook etc. is covered over the arm 82 of a plate cam 78 as mentioned above, and it is made to move to the method of the right compulsorily. While canceling clamping of CD27 now, a tray 22 is advanced more slightly than a receipt condition. Then, if a tray 22 is compulsorily pulled out to the front by hand, as shown in drawing 8, a control lever 94 will be depressed by projection 100. A control unit 96 remains contacting the lower limit of projection 100, when pulling out the tray 22 furthermore, if a control unit 96 separates from the projection 100 of a tray 22 as shown in drawing 9 after this, the operation section 97 will be put back to the carbon button 93 of a switch 92, and a control unit 96 will return up by this.

[0028]

At this time, projection 100 only slides on the control unit 96 top of a control lever 94. Therefore, a tray 22 is pulled out from opening 24, without receiving any active jamming. What is necessary is to insert a tray 22 into opening 24 and just to push it in, when containing a tray 22 on a chassis 21. In this case, it becomes possible for a mist beam and a control lever 94 not to become obstructive, and to contain smoothly.

[0029]

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[Translation done.]

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DESCRIPTION OF DRAWINGS

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## [Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the loading device 20 concerning this design.

[Drawing 2] It is the top view showing the condition of having removed the tray 22 of a loading device 20.

[Drawing 3] It is the perspective view showing the configuration of the read station 28 of a loading device 20.

[Drawing 4] It is the sectional side elevation of the loading device 20 in which the condition of having rotated the read station 28 caudad is shown.

[Drawing 5] It is the perspective view of a tray 22.

[Drawing 6] It is the perspective view showing the device to which a tray 22 is moved.

[Drawing 7] It is the top view showing the condition of having removed the tray 22 of a loading device 20 and having moved the plate cam 78 to the method of the right.

[Drawing 8] It is the sectional side elevation showing the condition of advancing the tray 22 of a loading device 20 and making a switch 92 operating it.

[Drawing 9] It is the sectional side elevation showing the condition of removing a tray 22.

[Drawing 10] It is the sectional side elevation showing the conventional loading device.

## [Description of Notations]

20 Loading Device

21 Chassis

22 Tray

27 CD

44 Crevice

58 Motor for Loading

92 Switch

94 Control Lever

95 Shaft

96 Control Unit

97 Operation Section

100 Projection

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[Translation done.]

(19)日本国特許庁 (J P)

(12) 公開実用新案公報 (U)

(11)实用新型出願公開番号

実開平7-10837

(43) 公開日 平成7年(1995)2月14日

(51) Int.Cl.

識別記号 庁内整理番号  
301 A 7520-5D

F.I

技術表示箇所

審査請求 法請求 裁求項の数1 OJL (全 5 頁)

(21) 出圖號: 客圖平5-40419

(71) 申请人 000000491

アイリス株式会社

■ 五都台東區地圖之第 1 丁目 2 番 11 號

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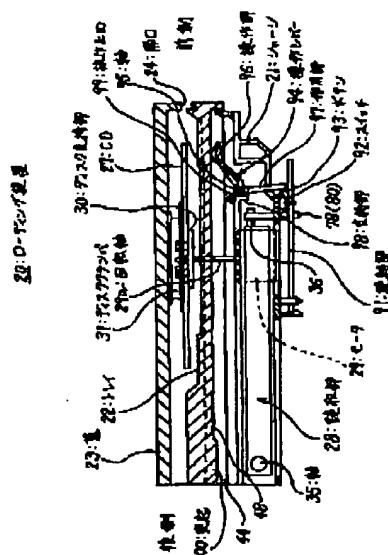
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(54) [考査の名稱] ローディング装置

(57) **【要約】**

【目的】トレイの取り付け、取り外しを容易にする。  
【構成】トレイ22の底にある凹部44の内部には突起100が形成されている。トレイ22を駆動するローディング用モーターを停止させるスイッチ92は、シャーシ21の下にある。シャーシ21の上側には、スイッチ92を操作する操作レバー94が取り付けられている。操作レバー94は、突起100によって押し下げられる操作部96と、スイッチ92のボタン93を操作する作用部97とが、L字状に形成されたものである。トレイ22が前進すると、操作部96が突起100で押し下げられることに伴い、作用部97がボタン93を押す。トレイ22をローディング装置20の内部に入れる場合も、ローディング装置20から取り出す場合も、突起100は操作レバー94に引っ掛けたりして邪魔になることがないので、容易に出し入れ可能になる。

タカラビニガラロードランナードリル 20ワット



## 【実用新案登録請求の範囲】

【請求項1】 記録媒体を出し入れするためのトレイと、上記トレイをシャーシ上で前後に移動させるための駆動手段と、上記トレイが上記記録媒体を取り出し可能な位置に移動したとき上記駆動手段を停止させるスイッチとを有するローディング装置において、

上記スイッチの操作用レバーの操作部を回動自在に配設し、上記操作部を押し下げて上記スイッチを押すための突起を上記トレイに設け、上記トレイの突起が上記スイッチの操作部を押し下げたまま上記操作部の前後に移動するようにしたことを特徴とするローディング装置。

## 【図面の簡単な説明】

【図1】 本考案に係るローディング装置20の構成図である。

【図2】 ローディング装置20のトレイ22を外した状態を示す平面図である。

【図3】 ローディング装置20の読み取部28の構成を示す斜視図である。

【図4】 読み取部28を下方に回動させた状態を示すローディング装置20の側断面図である。

## 【図5】 トレイ22の斜視図である。

## 【図6】 トレイ22を移動させる機構を示す斜視図である\*

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\*る。

【図7】 ローディング装置20のトレイ22を外し、板カム78を右方へ移動させた状態を示す平面図である。

【図8】 ローディング装置20のトレイ22を前進させスイッチ92を操作させる状態を示す側断面図である。

【図9】 トレイ22を取り外す状態を示す側断面図である。

【図10】 従来のローディング装置を示す側断面図である。

## 【符号の説明】

20 ローディング装置

21 シャーシ

22 トレイ

27 CD

41 凹部

58 ローディング用モーター

92 スイッチ

94 操作レバー

95 軸

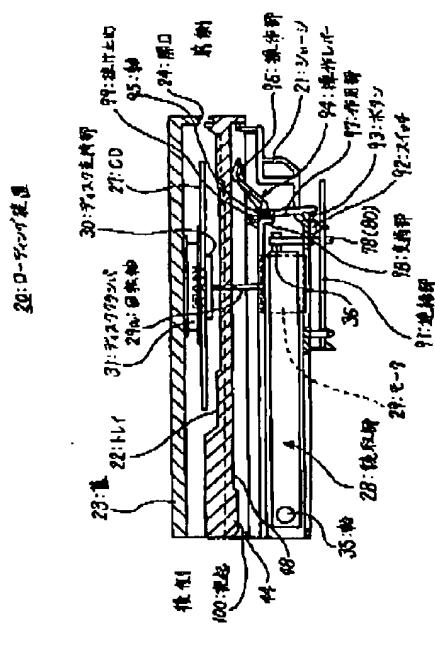
20 96 操作部

97 作用部

100 突起

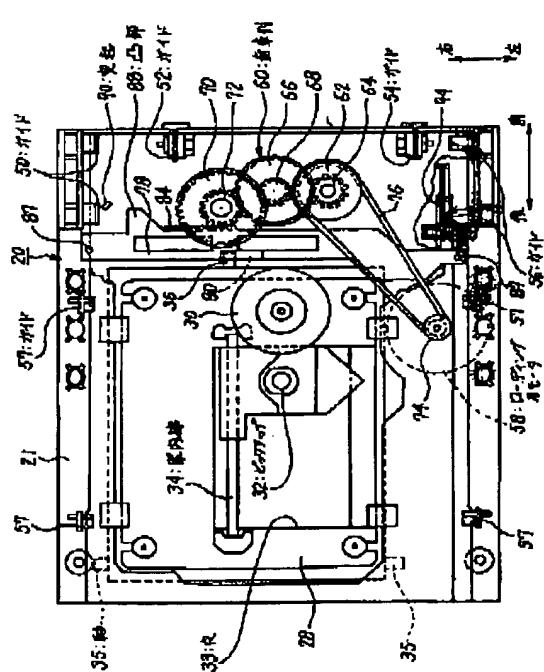
【図1】

本考案に係るローディング装置20の構成



【図2】

トレイ22を外した状態

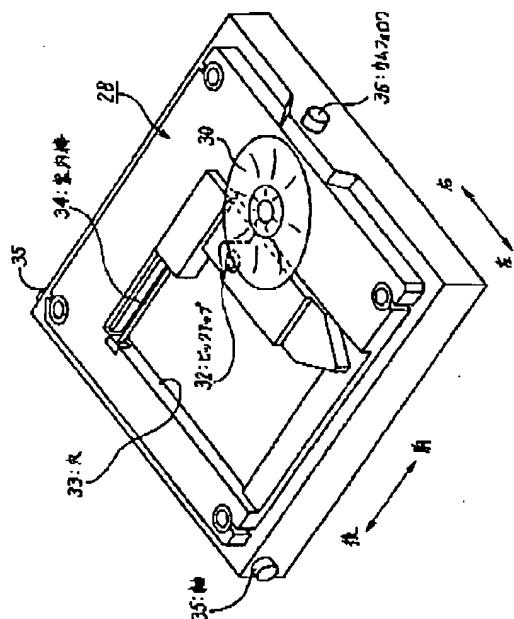


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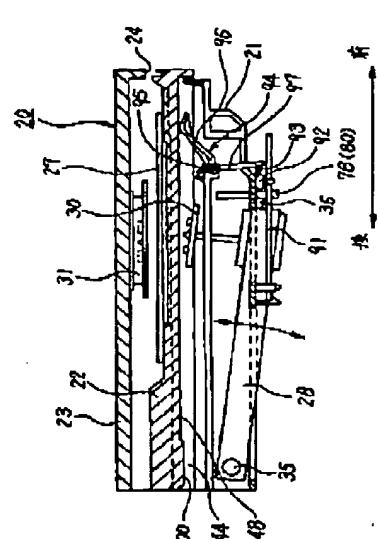
【図3】

純粋部28の構成



【図4】

純粋部28を下方に回転させた状態

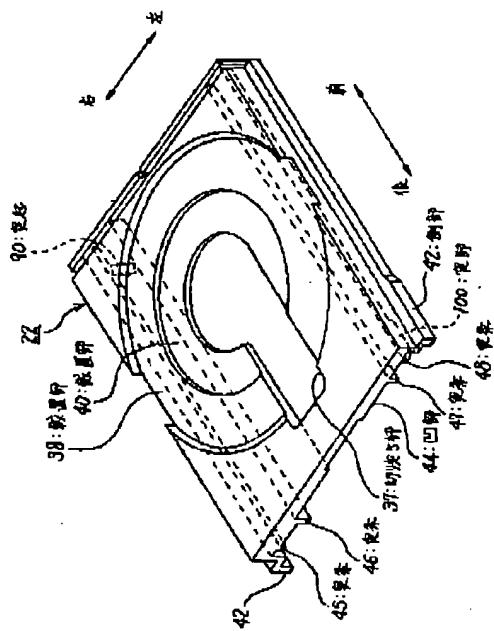


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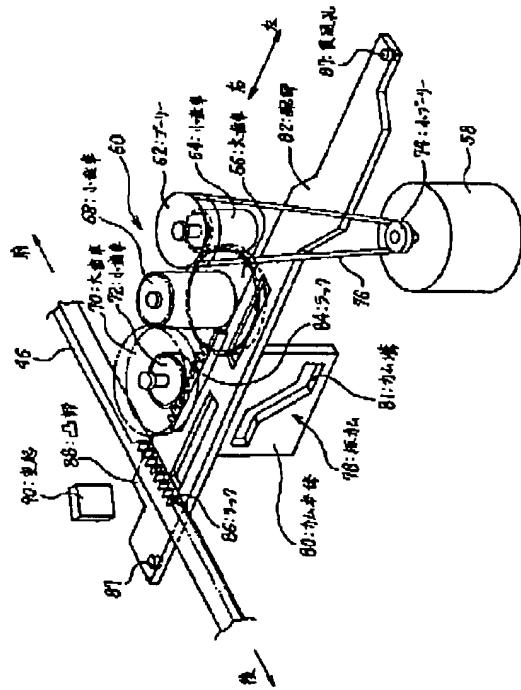
【 5】

トレイ22の特徴



【四 6】

### トレイ22を操作させつ相場

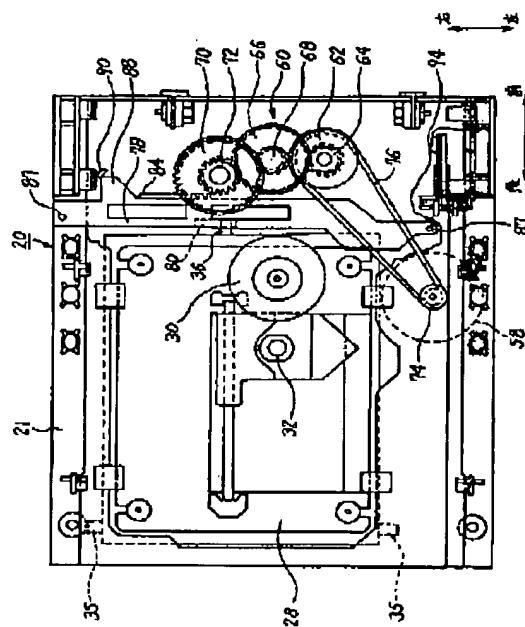


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【図7】

機力ム78を右方へ移動させた状態



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